

Title (en)  
PROCESS WATER GAS MANAGEMENT OF ELECTROLYZER SYSTEM WITH MEMBRANE

Title (de)  
PROZESSWASSER-GAS-MANAGEMENT EINES ELEKTROLYSESYSTEMS MIT MEMBRAN

Title (fr)  
GESTION DE GAZ ET D'EAU DE TRAITEMENT DE SYSTÈME D'ÉLECTROLYSEUR À MEMBRANE

Publication  
**EP 3800278 A1 20210407 (EN)**

Application  
**EP 19211887 A 20191127**

Priority  
US 201916593834 A 20191004

Abstract (en)  
A system and method are disclosed for inerting a protected space. Process water is delivered to an anode (16) of an electrochemical cell (10) where a portion of the process water is electrolyzed to form protons and oxygen. The protons are transferred across the separator to the cathode (14), and process water is directed through a process water fluid flow path including a first side of a membrane. Gas is transferred to a second side of the membrane to form a de-gassed process water on the first side of the membrane, and the de-gassed process water is recycled to the anode. Air is delivered to the cathode and oxygen is reduced at the cathode to generate oxygen-depleted air. The oxygen-depleted air is directed from the cathode of the electrochemical cell along an inerting gas flow path to the protected space.

IPC 8 full level  
**C25B 1/04** (2021.01); **A62C 3/08** (2006.01); **C25B 15/08** (2006.01)

CPC (source: EP US)  
**A62C 3/08** (2013.01 - US); **A62C 99/0018** (2013.01 - EP); **B01D 53/326** (2013.01 - US); **C25B 1/04** (2013.01 - EP); **C25B 15/083** (2021.01 - EP); **A62C 3/08** (2013.01 - EP); **B01D 69/08** (2013.01 - US); **B01D 2257/104** (2013.01 - US); **B01D 2313/243** (2013.01 - US); **B64D 2037/325** (2013.01 - US); **B64D 2045/009** (2013.01 - US); **Y02E 60/36** (2013.01 - EP)

Citation (applicant)  
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• US 2018318730 A1 20181108 - RHEAUME JONATHAN [US], et al  
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Designated contracting state (EPC)  
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Designated extension state (EPC)  
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**EP 3800278 A1 20210407**; US 11872424 B2 20240116; US 2021101034 A1 20210408; US 2024149083 A1 20240509

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**EP 19211887 A 20191127**; US 201916593834 A 20191004; US 202418413548 A 20240116